● PRINTER RUSH ●

(PTO ASSISTANCE)

Application :	09/825097	**Examiner :**	Osman	**GAU :**	2157
From:	NW93	**Location:**	(IDC) FMF FDC	**Date:**	10-21-05

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DOC CODE	DOC DATE	MISCELLANEOUS
☐ 1449		☐ Continuing Data
☐ IDS		☐ Foreign Priority
☐ CLM		☐ Document Legibility
☐ IIFW		☐ Fees
☐ SRFW		☐ Other
☐ DRW		
☐ OATH		
☐ 312		
☑ SPEC	4-3-2001	

[RUSH] **MESSAGE:** Specification pages 1, 10, and 11 have blank lines // missing U.S. Serial Numbers.

Please Resolve.

Thank You
NW93

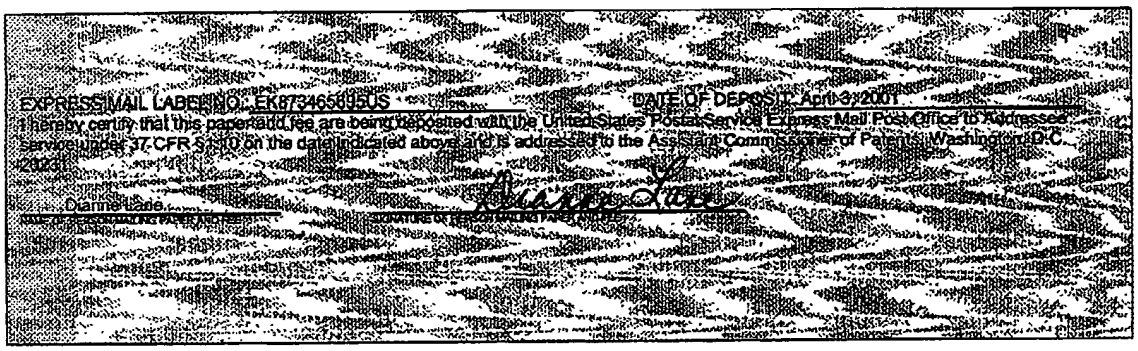
[XRUSH] **RESPONSE:**

09825078
09557708
09825078

INITIALS:

NOTE: This form will be included as part of the official USPTO record, with the Response document coded as XRUSH.

REV 10/04



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Improved Clickstream Data Collection Technique

BACKGROUND OF THE INVENTION

Related Inventions

The present invention is related to the following commonly-assigned U. S. Patents, which are hereby incorporated herein by reference: U. S. _____ (serial number 09/557,708, filed 04/25/2000), entitled "URL-Based Sticky Routing Tokens Using a Server-Side Cookie Jar"; and U. S. _____ (serial number 09/825078 filed concurrently herewith), entitled "Quality of Service Improvements for Network Transactions".

Field of the Invention

The present invention relates to a computer system, and deals more particularly with methods, systems, computer program products, and methods of doing business by improving

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Figure 2 is a diagram depicting an example of a networking environment in which the present invention may be used, illustrating preferred placement locations for the functionality of the present invention;

Figures 3A and 3B illustrate the structure of a URL of the prior art (including those which are augmented according to the first-mentioned related invention), and Figure 3C illustrates the URL structure used by preferred embodiments of the present invention;

Figure 4 illustrates a sample collection of clickstream data generated according to the present invention; and

Figures 5 and 6 provide flowcharts depicting logic which may be used to implement preferred embodiments of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention defines a clickstream data collection technique which enables collection of granular performance, hit, and user navigation intelligence. Data is collected regarding an end user's navigation path among a series of Web documents, and an inventory of the objects contained in the rendered documents is also collected. This is so even when documents and/or contained objects may be stored at a client-side cache or network cache. The present invention builds on techniques described in the related inventions, U. S. 09557708 titled "URL-Based Sticky Routing Tokens Using a Server-Side Cookie Jar" (hereinafter referred to as

"the first related invention") and U. S 09825078 titled "Quality of Service Improvements for Network Transactions" (hereinafter referred to as "the second related invention"). The present invention may be used, however, without the teachings of the second related invention, as will be described.

The teachings of the first related invention enable a server affinity to be defined for a particular client (without requiring the client's IP address to be unique), thereby bypassing load balancing for related messages within that affinity, and restore Web applications' ability to rely on the presence of cookies (with no assumption on the ability of a particular client to support cookie functionality). Instead, any cookies inserted into an outbound HTTP header are extracted prior to delivery of the response message to the client, and are stored in server-side storage referred to as a "cookie jar". After extracting the cookies, if the outbound response includes a markup language document, then any embedded URLs within that markup language document referring to or relative to the session's server are rewritten in a detectable manner to include what is defined as a "sticky routing token". A sticky routing token is a client-unique URL that indicates, *inter alia*, where in the network the cookie jar for this particular client session resides. The rewritten URL format is transparent to the client. If one of the rewritten URLs is subsequently referenced (e.g. by the user clicking on a link to that URL, or rendering a page which includes the URL), then the sticky routing token is automatically returned on the request message which is sent to retrieve the content of that URL.

The first related patent also teaches inspecting the HTTP header of an inbound request